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ABSTRACT

A study conducted for the Tennessee State Department of Education by Memphis State University addressed two objectives with respect to the Professional School Service Personnel endorsements for initial licensure for non-teaching professional personnel: to determine the validity of the National Teacher Examination (NTE) Core Battery tests for communication skills and general knowledge; and to recommend minimum qualifying scores for tests determined valid for use in Tennessee. The four non-teaching endorsements in questions were for: (1) secondary school guidance counselors; (2) school psychologists; (3) school social workers; and (4) school food service supervisors. The methodology for collecting data involved: groups or panels of professional personnel in review of test content; local school personnel in assessment of test item job relevance; and both types of personnel in estimation of knowledge level by test item among minimally qualified applicants. A total of 118 panelists (67 females and 51 males) participated. Ten educational and lay representatives served as the Standards Committee. Ratings from panelists and the Standards Committee determined that the Communication Skills Test was valid for use in Tennessee for licensure of professional school service personnel, but that the Test of General Knowledge was not valid for this purpose. A minimum score of 647 was recommended for initial licensure. Six tables contain study data. (SLD)

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VALIDATION OF SELECTED NTE CORE BATTERY TESTS AND RECOMMENDED PERFORMANCE STANDARDS FOR INITIAL LICENSURE OF PROFESSIONAL SCHOOL PERSONNEL IN TENNESSEE

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Introduction

The Comprehensive Education Reform Act enacted by the 1984 Tennessee General Assembly established statutory requirements to use specific types of tests for initial licensure/certification and endorsement of public school personnel in Tennessee. The legislation mandated that initial licensure applicants must present minimum qualifying scores on secured tests of communication skills, general knowledge, professional knowledge, and endorsement area specializations. The requirements were stipulated by the act to become effective on July 1, 1984, or as soon thereafter as the tests could be validated and minimum qualifying scores could be established.

The results of a 1984 statewide study indicated that the three NTE Core Battery tests (Communication Skills, General Knowledge, and Professional Knowledge) and 23 NTE Specialty Area tests (specialized areas) were valid to use as initial licensure tests in Tennessee. Data were also collected to recommend minimum qualifying scores for the valid tests. Based on the results of the study, the State Board of Education established minimum score requirements for the NTE Core Battery tests applicable to all initial licensure applicants. The State Board of Education subsequently adopted minimum score requirements as recommended for NTE Specialty Area tests that correspond to 14 endorsement areas.

During 1987-88, an additional statewide study determined that seven NTE Specialty Area tests and five additional subject-matter tests were valid initial licensure tests for relevant endorsement areas in Tennessee. The NTE Specialty Area tests included two extensively revised previously validated tests, two new tests, and three tests extracted from validated more general tests. The additional tests were developed collaboratively by Educational Testing Service and a consortium of states with state-sponsored teacher

licensure testing programs. Minimum qualifying scores were recommended for the two revised tests and two new tests. Submission of scores without a minimum score being specified was recommended for the additional eight validated tests. The State Board of Education adopted the recommendations regarding minimum score requirements and test score submission.

The test requirements established by the Comprehensive Education Reform Act of 1984 apply to all personnel who seek initial licensure in Tennessee. While the endorsements for initial licensure correspond almost exclusively to teacher specializations, the Professional School Service Personnel license is issued with four non-teaching endorsements: Secondary Guidance Counselor, School Psychologist, School Social Worker, and School Food Service Supervisor. Tennessee State Department of Education personnel identified the need to assess the validity of the Communication Skills and General Knowledge tests of the NTE Core Battery for use with Professional School Service Personnel licensure applicants.

In 1988-89, Memphis State University conducted activities under contract with the Tennessee State Department of Education to determine the validity of the two NTE Core Battery tests specified for Professional School Service Personnel endorsements and to recommend minimum qualifying scores for applicants who would take valid tests. The statewide data collection involved personnel from public education agencies and higher education institutions with professional preparation programs in the applicable specialized areas.

Objectives of the Study

The study conducted for the Tennessee State Department of Education by Memphis State University addressed two objectives with respect to the Professional School Service Personnel endorsements. The objectives were to determine the validity of the NTE Core Battery tests on communication skills

and general knowledge and to recommend minimum qualifying scores for any test that is valid to use in Tennessee. The study was delimited to the potential use of the tests under consideration only for initial licensure of public school personnel rather than to use in selecting personnel for employment.

Description of the Tests

The tests included in this study are secured instruments that are available from Educational Testing Service, a private, non-profit testing organization. The NTE Core Battery tests under review for use with Professional School Service Personnel were the Communication Skills and General Knowledge tests. The Communication Skills test covers listening, reading, and writing (multiple-choice and essay). The General Knowledge test encompasses literature and fine arts, mathematics, science, and social studies.

Strategy

The methodology employed in collecting all data used in the study involved groups or panels of professional preparation institutional personnel in the review of test content, local school district professional personnel in the assessment of test item job relevance, and both types of personnel in the estimation of knowledge levels by test item among minimally qualified initial licensure applicants. These three functions were performed for each of the tests under consideration. A separate committee was convened to review the analyses of the data from the responses of the panels to make decisions on test validity and recommendations on minimum qualifying scores for valid tests.

Participant Nomination and Selection

Potential panel members were nominated in response to a letter of request that specified the number of nominees to be identified for each specialized area covered by a test. Nominations were solicited from the chief academic

administrators of the professional preparation units in Tennessee with approved programs for the applicable specializations. The superintendents of representative local school districts throughout the state were requested to nominate personnel with appropriate licensure endorsements.

Panel members were selected by the study staff with attention being given to several factors. To the extent possible for each panel, nominees were selected on the basis of requisite expert qualifications, representation of gender groups, inclusion of relevant racial groups, and representation of diversity among institutions offering specialized preparation programs in Tennessee. A total of 118 panelists from higher education institutions and local school districts participated in the data collection during the 1988-89 study.

Panel Functions

A current form of each test was supplied by Educational Testing Service (ETS) for review by the panel members for each test. The panelists worked independently in performing the reviews based on instructions given by ETS personnel, who supervised the data collection sessions. One-day meetings to collect the data for the two NTE Core Battery tests were held in Knoxville, Nashville, and Memphis, respectively, during the period of January 31-February 2, 1989.

Each content review panel member representing a higher education institution in Tennessee performed three tasks. First, the panelist examined each item on the assigned test to judge whether or not at least 90% of the students completing the appropriate preparation program would have the opportunity to acquire the knowledge or academic skills required to choose the correct response for the item. Second, the panelist made judgments about the congruence between the proportion of the test section devoted to each topic and

the emphasis on the topic in the curriculum required for professional preparation. Third, the panelist indicated the degree to which the test section as a whole was congruent with the total professional preparation program component.

Each job relevance review panel member from a local school district reviewed each test item on the assigned test to make judgments about the relevance of the knowledge or academic skills to competent performance as a beginning specialized practitioner in Tennessee. The relevance of each item was judged as Crucial, Important, Questionable, or Not Relevant.

The knowledge estimation panel members for the tests were the individuals who performed the content review and job relevance assessments. At the test item level, each panelist made judgments about the difficulty of each item for persons who have minimum levels of knowledge and academic skills necessary for competent performance as a beginning specialized practitioner in Tennessee.

Standards Committee

A group of 10 educational and lay representatives was selected to serve as the Standards Committee for the study. The committee met in Nashville on April 27, 1989, to perform two tasks. First, the committee reviewed the data on appropriateness (content review and job relevance review) for each test to make decisions on the validity of the tests under consideration for use in Tennessee. Second, the committee developed recommendations on minimum qualifying scores for the valid tests based on a review of the knowledge estimation data and examinee performance data.

Presentation of Data

Data on the panelists and the Standards Committee for the study are presented below for selected demographic variables. The results of the content

review, job relevance review, and knowledge estimation are reported next for the NTE Core Battery tests.

Demographic Data

A total of 118 persons participated in test validation tasks: 67 females and 51 males. Of this number, 98 (83%) were white (53 females, 45 males); 17 (14%) were black (13 females, 4 males); and 3 (3%) were of other racial groups (1 female, 2 males). The three panel groups were distributed on the variables of gender and race as follows:

Item	Content Review (N=73)		Job Relevance Review (N=45)		Knowledge Estimation Review (N=117)	
Gender	f	%	f	%	f	%
Male	44	60	8	18	52	44
Female	29	40	37	82	66	56
Racial Group						
Other	3	4	--	--	3	3
Black	8	11	9	20	17	14
White	62	85	36	80	98	83

The 10-member Standards Committee was a broadly representative group of educators and lay personnel from Tennessee. The committee was described on the variables of gender and racial background as follows:

Gender

Female	60%
Male	40%

Racial Group

Black	40%
White	60%

NTE Core Battery Tests

The results of the data collection for the NTE Core Battery tests of Communication Skills and General Knowledge are presented below. The summarized data are reported for the content review, job relevance review, and knowledge estimation functions.

Content Review. The content review of the tests for Professional School Service Personnel endorsements was performed at three levels: test item, test section topic, and test. (The Writing-Essay section is not included because it is a single-item section.) Table 1 presents the results for each section of the NTE Core Battery Communication Skills and General Knowledge tests. The data revealed that over 50% of the panelists who reviewed each section reported at least 97% of the items for all sections are included in the curricula of the professional preparation programs. While the percentages included in curricula are generally lower, the same patterns exist when the 60% and 70% criteria are applied to the responses of the panelists.

Table 1

Results of Data Analyses on Content Review Ratings of Test Items by NTE Core Battery Test Section

Test and Number of Items	Percentage of College Personnel Who Rated Item Content as Appropriate for Curriculum					
	Over 50%	Over 60%	Over 70%	Over 80%	Over 90%	N
Communication Skills:						
-Listening (40)	98	98	88	75	33	32
-Reading (30)	100	93	87	67	23	31
-Writing - Multiple Choice (45)	100	100	89	76	38	31
-Writing - Essay	---	---	---	---	---	---
General Knowledge:						
-Social Studies (30)	97	97	80	70	30	41
-Mathematics (25)	100	100	88	80	68	41
-Literature and Fine Arts (35)	97	86	69	37	9	41
-Science (30)	100	100	80	47	13	41

Table 2 contains a derived index for each test section that represents the degree of difference betweeen the topical emphases of the test section and the professional preparatory curriculum component. Based on an index continuum from 0 (close similarity) to 100 (little similarity), the range of index values was from 9.36 for the Reading section of the Communication Skills test to 40.64 for the Writing - Multiple Choice section of the Communication Skills test. The index values for the sections of the General Knowledge test varied from about 11 to 24.

Table 2

Results of Data Analyses on Comparisons of Curriculum Content and Test Topic Emphasis by NTE Core Battery Test Section

	Difference in Relative Emphasis Index	N
Communication Skills:		
-Listening	19.84	31
-Reading	9.36	31
-Writing - Multiple Choice	40.64	31
-Writing - Essay	NA	---
General Knowledge:		
-Social Studies	23.97	38
-Mathematics	10.91	40
-Literature and Fine Arts	11.24	38
-Science	17.46	36

NA - Not Applicable

The data summarized in Table 3 represent the comparison of each total test and the overall related professional preparatory curriculum. The percentages of panelists who indicated close parallel or some difference were 83% for the Communication Skills test and 70% for the General Knowledge test. Neither test was judged to be appreciably dissimilar to the related preparatory program.

Table 3

Results of Data Analyses on Comparisons of Curriculum and Test Content by NTE Core Battery Test

	Percentage of College Personnel Choosing Each Response Option				
	Close Parallel %	Some Difference %	Much Difference %	Little Similarity %	N
Communication Skills	13	70	13	3	30
General Knowledge	10	60	30	0	40

Job Relevance Review. Table 4 presents the results of the job relevance ratings of test items for each test by local school district panelists who are Professional School Service Personnel. Responses of Crucial or Important were defined as indicating relevance for items in this analysis. Over 50% of the panelists who reviewed the sections of the Communication Skills test indicated that 97% to 100% of the items were relevant to competent performance as a beginning professional service practitioner in Tennessee. With respect to the sections of the General Knowledge test, over 50% of the panelists indicated that 26% to 60% of the items were relevant to competent performance as a beginning professional service practitioner in Tennessee.

Knowledge Estimation. The responses of panel members in performing the knowledge estimation function for the items of each test section were analyzed to derive estimated raw score means for minimally qualified licensure applicants seeking Professional School Service Personnel endorsements. Using conversion factors available from Educational Testing Service, the scaled score mean equivalent of the raw score mean was computed for each test. The results are reported in Table 5. These scaled scores for each NTE Core Battery test

Table 4

Results of Data Analyses on Job Relevance Ratings of Test Questions by NTE Core Battery Test Section

Test and Number of Items	Percentage of Public School Personnel Who Rated Item Content as Relevant to Job: Over 50%	Over 60%	Over 70%	Over 80%	Over 90%	N
Communication Skills:						
-Listening (40)	98	90	45	25	13	23
-Reading (30)	97	77	37	20	0	23
-Writing - Multiple Choice (45)	100	98	84	53	18	23
-Writing - Essay	---	---	---	---	---	---
General Knowledge:						
-Social Studies (30)	53	33	27	13	7	22
-Mathematics (25)	60	52	40	8	0	22
-Literature and Fine Arts (35)	26	20	14	0	0	22
-Science (30)	40	23	13	7	3	22

Table 5

Results of Analyses on Estimated Score for Minimally Qualified Certification Candidates by NTE Test

Test	Number of Items Reviewed	Raw Score Mean	Weight	Scaled Score Mean	Standard Error of Measurement	N
Communication Skills:						
-Listening	40	21.865	2.3624	-------	-------	54
-Reading	30	14.681	2.6313	-------	-------	54
-Writing Multiple Choice	45	21.469	1.0000	-------	-------	53
-Writing Essay*	1	6.463	3.8581	-------	-------	54
-Composite**	116	136.688	------	647	4.0	--
General Knowledge:						
-Social Studies	30	15.369	1.1688	-------	-------	62
-Mathematics	25	12.358	1.2243	-------	-------	62
-Literature and Fine Arts	35	17.282	1.0000	-------	-------	62
-Science	30	14.437	1.1666	-------	-------	62
-Composite	120	67.217	------	644	4.0	--

*Possible score range: 0 to 12
**Weighted raw score mean

can vary from a low of 600 to a high of 695, a 95-point range. Scores cannot be compared directly among these tests, however, because they are normed independently based on first-time examinees.

Standards Committee Actions

The Standards Committee elected one of its members to serve as chair with the responsibility to preside during its deliberations and formal actions as a committee. The decisions on test validity and recommendations on minimum qualifying scores as well as related matters are reported below.

Test Validity Decisions

Decisions on validity were needed with respect to the NTE Core Battery Communication Skills and General Knowledge tests. Each test was addressed separately in the determination of validity for its prospective uses. The Standards Committee was presented all data collected and analyzed in performing the content review and job relevance review functions. (Knowledge estimation data were not released to the committee until the test validity decisions were made.) The committee considered concurrently the content review results (test item, test topic, and total test levels) and job relevance review results for each test independently in making decisions on test validity.

Utilizing the approach described above, the Standards Committee concluded that the NTE Core Battery Communication Skills test was valid to use in Tennessee for the initial licensure of Professional School Service Personnel (Secondary Guidance Counselor, School Psychologist, School Social Worker, and School Food Service Supervisor endorsements). The NTE Core Battery General Knowledge test was declared invalid for initial licensure of Professional School Service Personnel based on insufficient relevance to competent performance as a beginning professional practitioner in Tennessee. The

decisions on test validity are shown in Table 6.

Table 6

Compilation of Committee Decisions on Validity of Selected NTE Core Battery Tests for Initial Licensure of Professional School Personnel in Tennessee

Test	Validity Decision
NTE Core Battery for Professional School Service Personnel	
Communication Skills	Valid
General Knowledge	Not Valid

Recommended Minimum Qualifying Scores

The Standards Committee was charged to formulate a recommendation on a minimum qualifying score for the valid test (the NTE Core Battery Communication Skills test) to use in the initial licensure of Professional School Service Personnel. The committee received the results of the knowledge estimation function for minimally qualified beginning practitioners based on the judgments of the panel members who reviewed the test. The data reported for the test as presented in Table 5 included the knowledge estimation raw score mean, the scaled score mean equivalent, and standard error of measurement derived for the norms.

The Standards Committee thoroughly reviewed and discussed the data presented on the test. The committee considered both the data from the knowledge estimation function and the norms for the NTE Core Battery Communication Skills test. The committee recommended a minimum qualifying score of 647 on this test for initial licensure of Professional School Service Personnel. The recommended minimum score corresponds to the current

requirement for initial licensure applicants with endorsements in teaching specializations. An additional recommendation of the Standards Committee was that the minimum qualifying score on the NTE Core Battery Communication Skills test for initial licensure of Professional School Service Personnel should be maintained in the future at the same level as the requirement for subject-matter specialized endorsements.